Fifty years of methodological trends in *JIBS*: Why future IB research needs more triangulation

INTRODUCTION

Fifty years since the founding of its main journal, international business (IB) has developed into a worldwide community of scholars with a common identity, well-established institutions, and disciplinary coherence. As a field, IB can point to substantial achievements in the form of theoretical advances, construct measurement, and legitimization by both scholars and business professionals, both within and outside the discipline. Given this record, it is an appropriate time to take stock of where we are as a field of inquiry, how we have arrived at this point, and where we could go in the future. Examining the field's development from a methodological perspective, we address the following questions: What has been the pattern of methodological evolution in *JIBS* during its first 50 years? How can an understanding of this pattern help inform future methodological developments in the field?

Over this 50-year timespan, IB scholars have institutionalized certain practices at the expense of others. As noted by several scholars (e.g., Sullivan, 1998; Shenkar, 2004; Sullivan & Daniels, 2005), this has included reaching consensus about how to conduct research. A field that coheres around a set of group commitments in this way establishes what is known in the history and sociology of science as a paradigm. Kuhn (2012 [1970]), who initially proposed the concept of a paradigm, conceived it as '[a] package of claims about the world, methods for gathering and analyzing data, and habits of scientific thought and action' (Godfrey-Smith, 2003: 76). The paradigm provides collective answers to what is regarded as good science: it sets the boundaries for what we research and how we research it.

The conventions of the paradigm define what constitutes *methodological rigor*. *Methodological rigor* refers to a scholarly community's standards regarding all aspects of the research process: the design, data collection, analysis, and reporting of the study. This conceptualization of methodological rigor acknowledges the collective, social nature of the evaluative criteria that scholars use to judge each other's work. It also indicates that rigor is not confined to considerations about the technical precision and sophistication of particular elements of a study; rather, it is concerned with the research design as a whole.

The institutionalization of a paradigm has many advantages, as Kuhn (2012) pointed out: the organization of scientific knowledge enables knowledge accumulation through greater precision and efficiency of scientific endeavors. But as Buckley, Doh and Benischke (2017: 1061) noted, this process can also lead to a 'narrowing' of the 'horizons' of the field – and indeed, we find this pattern with regards to the methods used in *JIBS*. We uncover salient trends over the 50-year period that in evolutionary terms have taken the form of gradualist, incremental changes that have reinforced existing practices and trends. Over the past 50 years, technological improvements in computer-aided data analysis have enabled the use of progressively more complex analytical techniques. Yet, although the complexity of analytical techniques and the scale of datasets has increased, the full range of available approaches to conducting research has not been employed in the journal – even approaches highly encouraged by editors and influential scholars.

We take the stance that this narrowing of the methodological options appearing in the journal is concerning, and that heterogeneity, innovation, and ongoing renewal of our methodological choices are necessary requirements for the advancement of our field. Some of the benefits that methodological diversity or heterogeneity provide a field have been long recognized, also within this journal (e.g., Cantwell & Brannen, 2011). Methodologies provide us with multiple lenses for observing the social world. The use of alternative methodological approaches makes it possible to pose new questions, address existing dilemmas in new ways, and identify phenomena not observable using the current methodological toolkit. Thus, methodological diversity can be the catalyst for scientific discoveries, by expanding the scope of our inquiries. Being open to discovery allows us to avoid a relevance gap between what is happening in the world and what we study (e.g., Buckley et al., 2017). To these well-known arguments about the benefits of diversity to discovery and relevance, in this paper we add another: that methodological diversity is necessary for achieving *methodological rigor*, both within the boundaries of a single study and a wider research program or field.

Our arguments about the benefits of methodological diversity rest on the principle of *triangulation*, which we define, following Denzin (1978) and Jick (1979), as *incorporating multiple methodological alternatives within a study in a way that addresses the biases, errors, and limitations introduced by any*

single option. Studying the same research phenomenon from multiple methodological angles is a necessary step in enhancing the validity and trustworthiness of conclusions (Cuervo-Cazurra, Andersson, Brannen, Nielsen & Reuber, 2016). Any means of observing the world introduces distortions that cannot be addressed, or even detected, except by using alternative means of observation. While there will always be limits on the extent to which methodological alternatives can be combined within a single study, a variety of combinations can be achieved at the level of the scientific field. We therefore regard triangulation as not just a strategy for the research design of a single study, but as a research mindset for a scientific field as a whole. We adopt the position that triangulation has the potential to improve both the rigor of the research we conduct in IB and its potential to lead to new discoveries.

The paper proceeds as follows. First, we introduce our conceptual framework, which we use to guide our analysis of methodological trends. Next, we explain our approach to analyzing the methodological and editorial content of *JIBS* since its first issue in 1970 until the last issue of 2019. We then present the trends we found, as well as the changes to journal conventions over time. We examine how changes to these conventions affected the methodological choices made. While attempts to diversify these choices to date have made little headway, we conclude by proposing how this could be addressed in the future. We argue that to do so requires targeting the standards by which we evaluate the methodological rigor of our research. Specifically, we propose that triangulation holds considerable promise as a means of utilizing a greater range of methodological options in such a way that enhances the quality of IB research.

CONCEPTUAL FRAMING: HOW THE METHODOLOGIES OF A DISCIPLINE EVOLVE

We conceptualize a scientific field as a social system whose evolution over time determines the knowledge it produces in terms of transformational breakthroughs and innovations, as well as improvements to the existing knowledge base in the form of greater precision and verification. The most influential and comprehensive understanding of this process remains that of Thomas Kuhn (2012 [1970]), whose evolutionary theory proposes that the development of a scientific field takes the form of punctuated equilibrium. That is, change over time to a field's theoretical claims, beliefs and values, and methodological

approaches – its paradigm – tends to be gradual and cumulative in nature (a pattern Kuhn characterizes as 'normal science'), but interspersed with rare periods of punctuation (which he terms 'revolutionary' or extraordinary science). Kuhn anticipated that for most of its history, a scientific field experiences gradualist changes and conditions of normal science – and IB is no different, as we will show (see also Sullivan, 1998; Sullivan & Daniels, 2005). We use key elements of Kuhn's theory, extended by subsequent generations of historians and sociologists of science (e.g., Campbell, 1986; Shapin, 1995), to develop a conceptual model of these evolutionary conditions.

In Kuhn's theory, the paradigm comprises the deep structure which sets the rules of the game for a scientific community: it comprises the 'constellation of group commitments' (2012: 181) that prescribe what is permissible/desirable behavior and warrantable knowledge. We follow Kuhn by ascribing particular importance to methodology in generating paradigmatic consensus (see also Hassan & Mingers, 2018; Masterman, 1970). A paradigm coheres around its methodological commitments: the standards for determining what is science; what constitutes acceptable evidence and procedures and tools for producing it; and the ways for adjudicating disputes. Thus, research is deemed to be good when it adheres to the values, principles, and norms – the 'epistemic virtues' (Daston & Galison, 2007) – of that paradigm. If paradigms are 'ways of seeing' (Kuhn, 2012: 4), methodology makes this viewing possible. As such, they illuminate the world, but they also direct, restrict and even distort scientific vision. Methodology provides a field's 'problem-solutions' in terms of how to go about solving a research problem, and even which problems to solve.

Based on Saunders et al. (2019), we define *methodology* to be an integral part of the paradigm upon which research is grounded: it acts as the bridge between the paradigm and the empirical world. It is the approach that scholars follow to produce what the community deems to be knowledge, including assumptions and norms about the most appropriate ways to observe the empirical phenomenon under investigation. *Method* refers to a research strategy for empirically investigating a phenomenon with the purpose of contributing to theory. In this paper, we group methods into four broad categories: (1) archival quantitative, (2) survey quantitative, (3) qualitative (including ethnography and case study) and (4) mixed

(including the use of 'hybrid' methods, such as qualitative comparative analysis, that challenge the traditional qualitative/quantitative divide). *Techniques* are operational tools for accessing an empirical phenomenon and its social meanings. We differentiate between techniques for data collection (e.g., surveys, interviews, participant observation, and focus groups) and data analysis (e.g., event history analysis, discourse analysis, content analysis, and regression analysis). Methodologies, methods, and techniques are closely related to each other, with the methodology driving the selection of methods and techniques.

Consistent with Kuhn's successors in the history and sociology of science (e.g., Clarke & Fujimura, 1992; Fujimura, 1988; Rheinberger, 2010; Shapin & Schaffer, 1985), we identify three types of methodological conventions that a scholarly community maintains in conditions of normal science. The first is *technical*, which consists of the repertoire of physical tools and software, as well as the codified techniques and procedures used by a research community for observation, measurement, categorization, and analysis. The second is *communicative*, which reflects the means for making scientific results publicly accessible and credible to the research community, including the genre and rhetoric of the scientific report, use of citations and modes of representation employed to convince peers of the credibility of one's findings, and establishment of exemplars for other scholars to follow. The third set of conventions is *social*, which consists of the criteria by which a research community evaluates and adjudicates between each other's knowledge claims, as well as the normative principles the community upholds about what constitutes good (i.e., 'sound', 'rigorous', 'trustworthy' or 'high-quality') research. Together, these technical, communicative, and social conventions set the range of methodologies, methods and techniques – *the methodological bandwidth* – commonly accepted and used for conducting research, and thereby the possibilities for what kind of knowledge is produced. Because they constitute habits and beliefs that are acquired through the scholarly socialization process (e.g., doctoral programs and research collaborations), they tend to be taken for granted.

Consequently, methodologies are more fundamental than methods and techniques—they determine what a scientific community collectively accepts as facts, set the norms and standards by which researchers

make methodological choices, and prescribe specific practices for conducting research. While the paradigm provides the structure for scientific activities in a field, human agency matters too, and thus methodological conventions are subject to change. Members of a scientific community intervene in the routines and habits of normal science by championing methodological innovations. We define an innovation as 'an idea, practice, or material artifact perceived to be new by the relevant unit of adoption' (Zaltman, Duncan & Holbek, 1973: 8). Given that the relevant unit of analysis in our study is IB's top journal and the ecosystem that maintains it, an innovation is something perceived as new to that community, even though it may already be established in another field. Methodological innovations include new technologies and codified protocols for data collection and analysis, new research designs and methods, new principles for evaluating research quality, and even (in rare cases) new paradigmatic approaches that rival the assumptions of normal science.

There are many ways in which the members of a scientific community can intervene to encourage variation. In this paper, we are confined to interventions related to *JIBS* journal content, guidelines, and policies. Interventions can range from coercive changes to journal policy (e.g., Beugelsdijk, van Witteloostuijn & Meyer, 2020 on data transparency; Meyer, van Witteloostuijn, & Beugelsdijk, 2017 on reporting p-values in tables) to persuasive calls for action by editors and senior scholars (e.g., Aguinis, Cascio & Ramani, 2017 on replicability). We posit that this latter type of intervention – which targets the social conventions of the research community – is of particular importance. Without changing the community's normative beliefs or *mindset* about how to conduct research, methodological innovations that do not conform to these expectations are likely to struggle to gain legitimacy.

The evolutionary perspective we are taking leads us to expect that the deep structure of the field acts as a selective force, with methodological innovations being rejected because they are incompatible with the established paradigm or adopted because they align with the existing paradigm. This leads to the conventions of the existing paradigm being reinforced as they are institutionalized over time. Paradigmatic norms and practices become routinized through education, socialization, and career incentives. In sum, the evolutionary approach we adopt posits that the methodological conventions of normal science are

maintained and strengthened through forces of both selection and institutionalization, amounting to a self-reinforcing cycle. Figure 1 illustrates this evolutionary pattern of IB as normal science.

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Due to this self-reinforcing pattern, IB is optimized for knowledge accumulation, not novelty: in evolutionary terms, it is structured to select out variety. In line with Kuhn's evolutionary theory, our model suggests that the types of methodologies, methods, and techniques used become more specialized over time, as alternatives and innovations are selected out because they are incompatible with the prevailing paradigm. Methodological advances in the field tend to center around refining, codifying, and improving the precision of the existing knowledge base and tools. As a result, normal science is potentially a highly efficient system for knowledge production (Kuhn, 2012), but carries with it the risk that a scientific community may be reduced to 'know[ing] more about less' (Sullivan, 1998: 838). From a methodological point of view, this narrowing of the bandwidth of approaches in use also constitutes a potential threat to rigor. Methodologists in the social sciences have long expressed the concern that paradigmatic preferences consistently favoring some methodological options over others constitute a source of bias (Shadish, 1993; Shadish, Cook & Houts, 1986; Webb, Campbell, Schwartz, & Sechrest, 1966). This is because any method, technique, or methodological approach is necessarily an inexact and incomplete means of observing and explaining the social world. Only the considered use of alternatives will enable researchers to understand the potential errors, omissions, and limitations that any single methodological option introduces.

At the same time as identifying these shortcomings of normal science, social scientists have offered a solution for encouraging greater diversity of methodological choices, in the form of triangulation (for recent overviews, see Farquhar, Michels, & Robson, 2020; Heesen, Bright, & Zucker, 2019; Schwarzenegger, 2017). Triangulation involves both *a priori* and *ex post* critical assessment of multiple

alternatives for all aspects of the research design within a single study, from formulating a research problem via data collection and analysis to interpreting the results. Later in this paper we will elaborate on the many forms of triangulation that may be incorporated in a research design, but for now, we introduce the types that are most recognized in IB and management, having been popularized by Jick (1979; see also Denzin, 1978). [1] They are 1) *method triangulation*, the various ways in which multiple methods may be combined in the one study (e.g., using both quantitative and qualitative techniques for data collection and/or analysis); and, in a single-method study, utilizing a variety of possibilities within that method, either for the purposes of 2) *data triangulation*: combining multiple data collection techniques and/or data sources or 3) *analytical triangulation*: combining multiple analytical techniques.

Incorporating multiple alternatives in a considered way strengthens both the rigor and discovery potential of the research we do (see e.g., Flick, 2004 for a similar discussion). First, triangulation enhances rigor by enabling *validation* of the results obtained from one methodological procedure with results obtained from a different procedure. Second, triangulation addresses perspectival biases and omissions introduced because each specific method or technique is suited to investigating certain types of questions and aspects of the phenomenon rather than others. Thus, use of multiple methodological procedures is necessary to avoid such distortions and expand the *scope* of inquiry, thereby making discovery possible.

Having provided our conceptual framework for understanding methodological evolution in conditions of normal science, we now turn to the specific case of international business and its premier journal. We outline how we analyzed our dataset comprised of journal content, in the form of both empirical papers and commentaries (including editorials). We use these empirical results to understand not just the methodological choices made by scholars in the IB field, but also the conventions that influenced them. In addition, we identify shifts in methodological conventions over the 50-year period, and the strong selective and institutionalizing forces they represent. In light of these results and our evolutionary model, we provide an agenda for a way forward. We show the potential for different forms of triangulation to inform research design in IB and suggest that the principle of triangulation is a powerful way to strengthen rigor in future IB research.

ANALYTICAL PROCESS

To analyze methodological trends, we conducted an interpretive content analysis (Chidlow et al., 2014; Krippendorff, 2018) of all empirical articles published in *JIBS* during 1970-2019. While our data are restricted to a single journal, we argue this focus is justified given its standing in the IB field and resulting influence on methodological practices in the field more generally. We provide an overview of our research process (summarized in Figure 2 in online Appendix 2), consisting of the separate phases of constructing the database of empirical papers, developing a coding scheme, and undertaking analysis of the results.

Constructing the database. We constructed the database by examining every article published in *JIBS* between 1970 and 2019. Four of the authors identified all empirical articles published in the journal and excluded all other material (e.g., research notes, editorials, books reviews, dissertation abstracts, and conceptual articles). As the analytical process progressed, we excluded reviews (e.g., meta-analyses) and conceptual articles that might include an empirical example but only for illustrative purposes. The final database consists of 1,265 original empirical articles (see online Appendix 1).

The review team classified papers in the initial database into four categories: (1) archival quantitative (based on secondary data) (n=623), (2) survey-based quantitative (n=474), (3) qualitative (n=97) and (4) mixed-method (n=71). We classified survey and archival quantitative articles separately, given their very different data sources (Chidlow et al., 2015; Fitzsimmons, Liao & Thomas, 2017). A key challenge in categorizing the articles resides in the changes in communicative practices over time. In the earlier decades, the methodological approach of the study was typically not reported in the same level of detail as in articles today. Methodological terminology has changed as well. For example, authors in the 1970s and 1980s used phrases such as ‘structured interviews’ or ‘face-to-face’ interviews to refer to surveys; and the term ‘mixed methods’ was not in use at that time. Hence, we often read an article in its entirety to place it in an historical context rather than impose contemporary definitions.

Developing the multi-method coding scheme. Following common practices in qualitative studies, the research team developed a coding scheme to capture the key methods and techniques used in the empirical

studies (see Table 3 in online Appendix 2). Common groups of codes across the multiple methods were used, allowing for comparability across sub-samples. These common codes were adapted for, and supplemented by, coding schemes specifically for each of the four methods, guided by the relevant methodological literature (e.g., Chidlow et al., 2014, 2015; Piekkari, Welch & Paavilainen, 2009). We refined these coding schemes during the coding process to improve the accuracy and integrity of the categories. This process of refinement was necessary given the diversity of methods and techniques in our database, and methodological changes that took place over the 50-year period. For example, the original coding scheme specified 11 distinct statistical procedures, but this was adjusted to 17 categories to account for procedures deserving a separate category (e.g., event studies and Poisson models) (see Tables 1 & 2 in online Appendix 2).

Conducting interpretive coding. We applied an interpretive approach to the content analysis of articles. That is, rather than just recording and counting instances of keywords, the coding teams carefully examined the whole text in which the specific keywords appeared. This approach allowed us to understand both what was present and absent in the examined text, capture latent meaning, and uncover shifts over time and nuances in coding categories. The coding for each type of method was conducted by a team of at least two people to ensure coding was checked for reliability and develop a common understanding of the meaning of the codes (Schreier, 2012). In general, there was high intra- and inter-rater reliability (> 0.95). Small-scale changes were made due to unclear or ambiguous information reported in the articles.

Analyzing the data. We estimated descriptive statistics using Stata 14 and Excel (online Appendix 3), as well as conducting a qualitative content analysis of the qualitative and mixed-method sub-samples. We then conducted expansion analysis (Gephart, 1997) to place our coding results into the broader context of the journal's social, technical, and communicative conventions. This analysis consisted of qualitative thematic coding of the 61 *JIBS* editorials with relevant methodological content to identify methodology-related interventions suggested by editors (e.g., Eden, 2008), and all commentaries related to methodological issues (n=36). These sources allowed us to trace both the interventions undertaken in the journal, as well as the shifting conventions over time. This analysis included paying attention to explicit

discussion of research standards and evaluation criteria, as well as to implicit assumptions and latent meaning.

Limitations. We note that we did not seek to determine if a paper used the 'appropriate' techniques, only which type. Another limitation is that while we adopt the position that methodological rigor covers all aspects of the research process, our coding could not be so comprehensive. Hence, we selected topics for coding that provide an overview of key trends in terms of design, data collection, analysis, and reporting. Coding for triangulation was hindered by the limited use of the term beyond qualitative and mixed-method research. When a keyword search revealed that it is not an established convention (it was mentioned in fewer than 50 empirical papers over the 50-year period), we searched for evidence of use of multiple analytical techniques in the case of archival and survey research. Accordingly, we were able to identify papers that may have used analytical triangulation, even though authors did not mention this explicitly in reporting their study designs and results.

RESULTS: METHODOLOGICAL TRENDS IN *JIBS* 1970-2019

We commence this section by examining method-specific trends across the 50-year period, reporting each method category: archival quantitative, survey quantitative, qualitative and mixed-method research (online Appendix 3 provides the detailed data on which this section is based). Before presenting these results, we first provide an overview of the relative popularity of each method category in Figures 2 and 3 below. Figure 2 compares the evolutionary trajectories of the four methods by decade and Figure 3 shows the annual trends for the most recent decade (2010-2019). We note that organizing papers by decade is indicative in nature; comparison and interpretation across decades must be made with caution. Archival quantitative research (always a major presence in the journal) has become the dominant method, while survey quantitative research has recently experienced a substantial decline. Qualitative methods were common in the early years of the journal but have been marginalized since that time. Mixed methods have always had a very limited presence in the journal, thus restricting opportunities for method triangulation.

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Evolution of archival quantitative research (Tables 1 & 2 in online Appendix 3).

The analytical techniques used in archival studies during the 1970s and 1980s were either highly descriptive (47% and 28%, respectively) or single regression models (39% and 39%, respectively) with more advanced techniques (advanced regression models such as instrumental variable regressions and discrete choice models) used less commonly (3% and 14%, respectively). Moreover, as IB scholars aimed to explore cross-national differences in firm (48%) and industry (13%) behavior, many studies in the 1970s were of a cross-sectional nature (39%) and based on analysis of more than one country (29%). The 1980s brought more complex quantitative analytical techniques into the field as studies with longitudinal data (28%) as well as panel data (23%) began to appear. During this time, IB researchers focused on analyzing cross-national differences using country- (33%), firm- (33%) and industry- (16%) level data based on multi-country samples.

While simple regression analysis continued to dominate archival quantitative studies during the 1990s and 2000s (43% and 37%, respectively), interactions and mediational analyses grew in popularity as researchers started to model the complexity of IB phenomena. What is more, advanced logit models and event study analysis started slowly to be adopted in IB studies. These two periods saw the first papers with data collected at individual and sub-national levels, further exploring the complexity of IB phenomena.

During the 2010s, we witnessed a further increase in the use of advanced analytical techniques (43%, up from 31% in the 2000s) as well as the acknowledgement and use of a variety of statistical software in archival quantitative studies. For instance, advanced logistic regressions (e.g., discrete choice models), Heckman selection models and advanced regression models were adopted more frequently. What is more, the proportion of studies with more than five countries in the sample reached 58% in the 2010s attesting to a strong emphasis on comparative, cross-national IB research. In addition, an increase in the use of panel

(55%) and longitudinal (22%) data sets provides evidence of concerted effort to capture the dynamics of IB phenomena, albeit predominantly at the firm level (48%) and rarely via multilevel methodology.

We also found trends toward increased use of multiple analytical techniques within the same study. For archival quantitative articles, it increased from 3% in the 1970s to 36% in the 2010s (compared to survey quantitative articles, in which the increase was from 2% to 43% over the same period). For instance, researchers may apply multiple analytical techniques in a stepwise fashion to produce their results (e.g., CFA and regression in SEM; event study and regression analysis). Other studies apply multiple techniques to multiple (sub)samples to test hypotheses in various (e.g., hierarchical or longitudinal) ways. While such efforts may increase overall validity, reliability, and generalizability of results, they often do not constitute explicit or conscious research design choices regarding analytical triangulation. Rather, the use of multiple analytical techniques within the same study often takes the form of robustness analyses to establish *ex-post* reliability of results. Indeed, reporting of robustness analyses in quantitative studies (archival and survey) is now the norm (close to 70% during 2010s) in *JIBS*.

In summary, archival quantitative research exhibited a pattern of increased technical sophistication and analytical complexity in both modeling and reporting. The type of data collected grew in complexity, as scholars increasingly collected multi-country and longitudinal data to better capture the contextual embeddedness and dynamism of IB phenomena. To accommodate this need for more complex data, scholars often employed data via purchased third-party databases, which became increasingly available in digital form during the 1990s (33% of archival quantitative articles) and beyond (60% of archival quantitative articles during the 2010s).

Evolution of survey-based quantitative research (Tables 3-6 in online Appendix 3).

Similar to archival studies, the analytical techniques used for survey-based research during the 1970s and the 1980s were either descriptive (81% and 68%, respectively) or simple regression models (17% and 32%, respectively). In addition, scholars regularly mentioned the type of survey used, predominantly mail (51% and 39%, respectively) and self-administered (20% and 31%, respectively). Regarding survey

administration, studies tended to provide insufficient information. While this was consistent with the lack of detail generally provided in methodology sections at the time, it put the data collection equivalence[2] of the instruments used at risk and thus diminished the possibilities for replication. A similar pattern can be found for translation, a key aspect of cross-cultural survey research (Brislin, 1970). Acknowledgement of any translation procedures – as well as the use of languages other than English – was rare throughout this period, despite being acknowledged as an issue in *JIBS* (e.g., Sekaran, 1983).

In the 1990s, IB scholars used postal surveys as their main data collection mode (57%). The first electronic surveys appeared in the journal in the early 2000s. Codified frameworks for cross-country/cultural data collection were now well established in other disciplines, but most IB scholars did not mention the steps undertaken to establish translation equivalence to achieve data collection equivalence between instruments used in different countries – despite continued recognition of the importance of data collection equivalence and comparability of data and measures (e.g., Mullen, 1995; Singh, 1995). In contrast, there was a shift in terms of techniques for data analysis used by survey researchers beginning in the 1990s. Thus, we saw the emergence of more advanced analytical techniques (e.g. SEM, logit/probit, nested models) using a wider range of software (e.g. LISREL, SAS) to examine survey data.

Given the difficulties in primary data collection – similar to previous decades – survey-based studies in the 2010s relied predominantly on cross-sectional data designs (92%). Moreover, over 47% of these studies used samples of more than five countries. New possibilities emerged due, in part, to electronic data collection procedures from the 1990s onwards. Indeed, survey-based data collection shifted in the 2010s from postal (23%) to self-administered (30%) surveys, followed by electronic surveys (27%). New technological possibilities for administering surveys were, however, insufficient to arrest the decline in the number of survey-based papers being published in the 2010s (Figure 3).

The 1990s and onward saw the use of advanced analytical techniques – in particular structural equation modeling (SEM) – to analyze increasingly large and complex datasets. While analysis and reporting increased in sophistication and technical rigor, attention to data collection issues (i.e., utilizing standardized procedures like Dillman's (1978, 2000) and translation equivalence in cross-cultural studies

(Chidlow et al., 2015) remained sparse. Even in the 2010s, the majority of IB scholars collecting data via surveys still failed to address these methodological issues, which is surprising, given that the need for cross-cultural equivalence and comparability of data and measures has been long recognized in the journal (e.g., Mullen, 1995; Sekaran 1983; Singh, 1995).

Evolution of qualitative/mixed research (Tables 7-10 in online Appendix 3).

In the 1970s and the 1980s, the use of qualitative research was justified as being a 'necessary precursor to testing a more rigorous hypothesis' (Mascarenhas, 1982: 88) given the 'limited' nature of extant knowledge (Majumdar, 1980: 103) and the complexities of cross-border business settings. These complexities were a reason provided for mixed-method designs (Grosse, 1983; Poynter, 1982). Contributing to the sense of exploration in this period was the lack of codified protocols available for conducting both qualitative and mixed-method research. Yin's (1984) case study 'blueprint' took time to diffuse to international business (first cited in *JIBS* in 1990). There was a similar lack of codification in mixed-method studies – even the term itself was not in use until the late 1980s. Because of the lack of codification, explaining qualitative data analysis in this period was challenging, with authors often defaulting to terms from quantitative content analysis (e.g., the analogy of 'factor groupings', Blake, 1972; Root & Mennis, 1976).

Throughout the 1990s and the early 2000s, the number of qualitative papers published by the journal declined. Only fifteen qualitative papers were published from 1991 to 2004, of which 53% cited Eisenhardt (1989) and/or Yin (1984), only to justify case selection and validity, rather than using these protocols to inform the study design. Instead, we characterize the papers from the 1990s through the mid-2000s as 'disguised' qualitative research. That is, research design and reporting mimicked quantitative research to the greatest extent possible (even avoiding the use of the term 'qualitative'). Writing up the study as a form of hypothesis testing was common. Findings were discussed in an aggregated and even quantified manner. Indeed, some researchers sought to perform statistical tests on interview data when it may have been inappropriate. Other authors took the additional step of mixing qualitative and quantitative data, not just

analysis, without any clear benefits. In the mixed-method designs in this period, the qualitative part of the study remained subordinate (16% had qualitative dominant while 40% were quantitative dominant).

We detected a modest shift in attitudes towards qualitative research beginning in 2005. Not only was there a greater presence of qualitative research in the journal – 48% of all qualitative papers were published from 2005-2019 – but a wider range of qualitative approaches and traditions was represented. For instance, we observed studies that used an interpretive approach, critical realism, process research, business history, photoelicitation and the Gioia 'template' for reporting qualitative research. Some types of qualitative research long neglected by IB researchers made an appearance, particularly ethnography and participant observation. The limited use of ethnography remains noteworthy, given the centrality of culture to IB. The relevance of ethnography and anthropology was recognized early on, but the first ethnography was not published until 2009 – and even then, it was crafted as a mixed-method study. Only two traditional ethnographies have been published in *JIBS* (both in a special issue on qualitative research).

Instead, multiple case studies based on cross-sectional data seeking to generate potentially generalizable relationships and propositions were the main form of qualitative research undertaken in this period (a form of 'qualitative positivism' that Piekkari et al. (2009) found to be the 'disciplinary convention' in IB research). Interviews remained the dominant data source (used in 90% of qualitative papers in this period), with a limited use of observation (26 %) or documentary sources (57%) despite the potential of the internet and digitalization for textual analysis. These findings reveal little progress with respect to data triangulation, with a high dependence on interviews and only 21% referring to the use of multiple techniques for data collection, and few showing evidence of analytical triangulation for data analysis. Single case designs remain in the clear minority (15%). The decline in mixed-method papers would be even more precipitous, were it not for the emergence of the 'hybrid' method of qualitative comparative analysis (QCA), which has been utilized in five studies.

Despite some attempts to collect longitudinal data, the majority of studies (59% in qualitative papers and 73% in mixed-method papers) remained mostly cross-sectional in nature, although with an increased focus on multiple cases. Mixed-method studies have accounted for such a small proportion of the empirical

studies in *JIBS* (71 papers in total) that trends are difficult to discern. While there is a wide variety of possible mixed-method designs (Hurmerinta-Peltomäki & Nummela, 2006), this variety has not been reflected in *JIBS*. In fact, there was little change in the preferred mixed-method design: combining an interview-based study with a questionnaire (56%). Both qualitative and mixed-method research currently have a tenuous position in the journal: in 2019, of the 34 empirical studies, only two were qualitative and one used mixed methods, thus continuing the downward trends.

Discussion of methodological trends 1970-2019

Overall, the evolution of methods in IB has produced several clear trends. Firstly, we detect a decline in the diversity of methods in use evidenced by relatively fewer studies applying survey quantitative, qualitative, and mixed methods (see Figure 4a). At the same time, the analytical complexity of articles has increased (see Figure 4b): that is, more attention is paid to technical precision in the following of codified procedures and use of sophisticated statistical techniques for data analysis involving more extensive datasets. While the ability to analyze larger archival datasets using an array of techniques may increase the power to detect certain phenomena, it raises concerns about the possibility of Type I errors or spurious results (Nielsen, Eden & Verbeke, 2020), and temptation to HARK (Meyer et al., 2017). Moreover, the growing use of 3rd party data (especially purchased datasets) may cause concerns about whether rigorous data collection practices were employed to establish accuracy and validity, as well as equivalence and comparability across countries. In addition, potential threats to analytical quality may stem from the lack of first-hand knowledge of the data and its underlying sources (Beugelsdijk et al., 2020). Similar concerns relate to the underreporting of measures to ensure the rigor and equivalence of survey data collection.

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INSERT FIGURES 4a AND 4b ABOUT HERE

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Triangulation has the potential to address many of the threats to rigor identified in our analysis. For example, designs that combine archival quantitative data and analysis with in-depth qualitative interviews (methods triangulation) can provide researchers with greater insights into their samples and enhance the interpretation of results. Archival research may also be enhanced through greater use of analytical triangulation by showing results are robust to the technique used, ruling out endogeneity issues; and data triangulation by addressing sample issues, all of which enhance credibility and replicability of a given study. Greater use of mixed-method designs would allow IB researchers to address the construct and 'emic' validity of our research (e.g., Tung & Stahl, 2018). Yet despite its potential utility, we found little evidence that triangulation has been institutionalized as a concept. There has been a decline in the use of method triangulation and while the rise of the use of multiple analytical techniques for robustness checks in quantitative research is encouraging, this is a crude form of (*ex post*) analytical triangulation. As we have highlighted in our framework of normal science, conceptualizations of rigor, including triangulation, rest on the methodological conventions that serve as the deep structure of the paradigm. Hence, we now examine how the methodological conventions in the journal were established and reinforced over time.

The evolution of social, communicative, and technical conventions

In this section, we examine evolution in the social, communicative, and technical conventions in *JIBS* over the 50-year period. We distinguish three change processes related to the perceived state of the field and the editorial priorities of the journal itself. The first change process – *establishing* conventions – took place as part of delineating the IB field and the scope of the journal (1970s-1980s). At this stage of the journal's development, the desire for rigor (i.e., 'sound methodology') was balanced by the perceived need to allow for exploration given the nascent state of the field. In this period, there was a relatively high level of method diversity and low levels of analytical complexity. The next process – *institutionalizing* conventions – accompanies the quest to enhance the status of the journal and the IB field. Conventions supporting 'rigor' – which was typically not defined but implicitly associated with analytical complexity – were embedded and reinforced over time. By the 2000s, concern that this was restricting progress in the field led to more

proactive editorial interventions seeking to establish a greater diversity of methods. The third process – *modifying* conventions – emerged at this point, in parallel with the ongoing process of institutionalization. However, the interventions that were attempted as part of this process did not arrest the trend towards reduced diversity of methods.

Establishing conventions

In the early years of *JIBS*, the research community was preoccupied with defining the field of IB and building critical mass. Researchers experimented with diverse data sources, techniques and methods to respond to the complexities of cross-border research settings without strong pre-existing guidelines or exemplars. The editorial board encouraged this exploratory, interdisciplinary approach, and acknowledged the difficult methodological tradeoffs researchers faced in such circumstances: '*JIBS* will attempt to balance the desire for high theoretical and empirical standards with the relevance and difficulty of doing research on a particular topic' (Lessard, Wells & Brandt, 1983: 9). If a choice had to be made, then Editor-in-Chief (EIC) Dymsza reflected that 'we insisted upon sound methodology, but preferred substance and the advancement of knowledge over methodology' (1984: 11). Sekaran put it more bluntly: 'we ought to be willing to settle for less than the ideal research designs' (1983: 69). The *social conventions* that prevailed reflected this embryonic state of the field. Methodology should be dictated by the nature of the task assumed (Ogram, 1981) and this included a legitimate (although subordinate) role for qualitative and mixed-method research, as 'an adequate understanding of how decisions are made usually requires at least some data from extensive interviews with managers inside the firm' (Wells in Lessard et al., 1983: 111).

Social conventions emphasizing substance over rigor were in line with the *communicative conventions* of the time. Given their shorter length due, in part, to the journal's 5000-word constraint (*JIBS*, 1976), articles did not provide detailed explanations of methodological choices. Researchers were not expected to report how they had paid systematic attention to validity, reliability, and generalizability. There are occasional references to these standards, but only as taken-for-granted norms (e.g., Cronbach's Alpha).

While separate methodology sections were typically included in quantitative studies, they often provided few details.

These social and communicative conventions driving early research in *JIBS* were further reinforced by *technical conventions*. Methodological choices were restricted and estimation with advanced techniques was costly in terms of software coding expertise, computation time, and sample size requirements, leading to the use of less-sophisticated (though diverse), predominantly univariate analytical techniques during the 1970s and 1980s. The lack of readily available advanced statistical techniques meant that while they were actively encouraged by the editorial team, papers involving 'modern quantitative techniques' were rare (Dymsza, 1979: 7).

In sum, the combination of these three conventions during the 1970s and 1980s led to relatively high levels of method diversity and relatively low levels of analytical complexity. As a new field develops, such behavior is conducive to laying out research agendas, mapping boundaries of the field, and identifying novel phenomena by encouraging exploration in terms of research design and methodology. Thus, despite technical and methodological restrictions, scholars conducted some ambitious multi-country and large-scale studies that, in turn, provided the foundation for the future research agenda of the field. As the 1980s ended, these conventions began to shift, leading to a change in the dominant methodological trends.

Institutionalizing conventions

During the 1990s, when the journal had become more established, editorial focus shifted toward legitimization, as *JIBS* sought to improve and then consolidate its 'stature' by increasing its impact factor (Phene & Guisinger, 1998). Quality of output – often measured in comparison to other top journals with rigorous statistical practices – was perceived as a way to improve the journal's status and legitimize it for promotion and tenure purposes (e.g., DuBois & Reeb, 2000). As a result, the *social conventions* of *JIBS* shifted from exploration toward 'sound methodology' – as was seen to befit a more elite journal. Soundness was framed in terms of the correct use of advanced statistical techniques. This preoccupation became even

more pronounced in the early part of the 2000s, as the lack of replicability and generalizability was perceived as having a negative impact on the research contribution and the journal's ranking. Shaver (2006: 451) lamented the standards prevailing at this time by stating: 'The current norm for interpreting empirical results rests almost exclusively on highlighting the number of *'s next to coefficient estimates in the tables'.

The 2000s saw the introduction of regular editorials on best practices related to analytical complexity, a feature of the journal that has continued. For instance, Reeb, Sakakibara and Mahmood (2012) explained how endogeneity occurs in IB studies and provided guidelines on how to deal effectively with it. More recently, others have called attention to ways to improve reproducibility and replicability in IB research, resulting from increased pressures to report tests of hypotheses that are statistically significant and large effect sizes (Aguinis, et al., 2017; Meyer, et al., 2017). Yet, despite regular editorials covering best practices for reporting analytical details of empirical studies (explicitly addressing Shaver's critique), there has been a lack of attention to other aspects of research design, such as best practices for survey data collection.

Communicative conventions established in this period intensified the pressures for greater focus on analytical complexity and technical precision. EIC Lewin abolished word limits for manuscripts (*JIBS*, 2003), enabling more detailed reporting and justification of methodological choices. Alongside this change, there was a policy requirement to detail the statistical tests conducted – although this editorial pressure to be more transparent did not extend to procedures for ensuring data collection quality. The structure and reporting conventions of papers became increasingly standardized. Eden (2010) commented that there was now a standard 'cookbook' in use in the field. In the case of quantitative research, this cookbook typically included a methods section and inclusion of descriptive statistics, with authors reporting significant correlations, means, and standard deviations as a matter of course. A methodology section was now a routine matter for qualitative research as well, which focused increasingly on the importance of analytical complexity in the form of demonstrating compliance with codified procedures for data analysis.

Technical conventions contributed to the preoccupation with analytical complexity as a dominant measure of the (methodological) quality of a study. During the 1990s, the PC was widely available and

computational speed improved exponentially for researchers. Many software providers introduced new commands that facilitated various econometric techniques. Coupled with these analytical improvements was the greater availability of larger datasets from non-Western countries. These technological improvements further facilitated the adoption of advanced analytical techniques, thus inducing a shift from univariate to multivariate analysis (Sullivan, 1998). Since the 1990s, technical advances have continued to multiply the range, power, and accessibility of advanced analytical techniques. However, adoption even of these advanced techniques tended to be slow. Computational speed improvements needed to be accompanied by the availability of large, digitized datasets and greater user-friendliness (e.g., graphical user interfaces) to make advanced analytical techniques tractable to a larger segment of IB scholars.[3]

Overall, the methodological trends established in the 1990s were reinforced through the institutionalization of conventions in more recent decades: conformity to a particular form of reporting (even for qualitative papers), and quality concerns focusing on encouraging the correct usage of advanced statistical techniques that were now more readily available. However, as we cover in the next section, editorial interventions to encourage greater diversity of methods did not have a substantial impact, and methodological innovations in other areas of the social sciences hardly diffused into IB: that is, while interventions to encourage analytical complexity were accommodated into the paradigm, interventions to encourage methodological variation were selected out.

Modifying conventions

The reinforcement of conventions driving the field towards increased analytical complexity and reduced method diversity did not pass unnoticed in *JIBS*. In the late 1990s-early 2000s, a series of commentaries were published expressing concern about the narrowing of the field brought about by the entrenchment of the 'scientific' paradigm. The preoccupation with analytical complexity was seen to have negative consequences; while it helped elevate the journal to a higher status, scholars voiced concern that it came at the cost of innovation and plurality in terms of foci, content, and methodological advancements (e.g.,

Sullivan, 1998). In this debate, methodological rigor and diversity were typically seen as opposed: more of the latter would come at the expense of the former.

Incoming EIC Lewin (2003b) responded to these concerns by acknowledging the need for more novelty, 'variety', and interdisciplinary research. His editorials detailed initiatives to revitalize the journal without sacrificing rigor. He had some success in achieving these twin goals. Notably, his intervention to diversify the editorial board could well be the reason for the move away from 'disguised' qualitative research, which took place around 2005. At the end of his tenure, Lewin (2007: 1053) warned against the tendency for a major journal to be susceptible to 'creeping parochialism'. He reminded the readership of the importance of innovativeness as a core value. In the same year, Tsui (2007: 1353) warned against 'the homogenizing tendency' of international management research and advocated for the development of 'pluralistic scholarship' as a way to encourage novelty and advance knowledge about different contexts. However, while the lack of pluralism was debated, it is notable that there was no active discussion as to what constitutes rigorous research, something that was taken for granted.

Lewin's dual focus was continued by his successors in the 2010s: that is, increasing the range and variety of methodologies, while at the same time aiming for greater methodological sophistication in utilizing such diverse approaches. EIC Cantwell and Deputy Editor Brannen pointed out that this was necessary to realize the journal's interdisciplinary vision: 'as methodological variety becomes more accepted, and as the guidelines for rigorous research in different areas of IB studies become better established and more widely understood, the potential for new kinds of cross-fertilization of ideas should become greater' (Cantwell & Brannen, 2011: 4). Specific editorial initiatives to encourage more diverse qualitative research included (1) a special issue in 2011 (initiated by EIC Lorraine Eden), (2) publication of relevant editorials,[4] and (3) recruitment of additional qualified reviewers to the editorial board (Cantwell & Brannen, 2016). Despite these editorial interventions, our analysis has shown that the number of qualitative and mixed-method articles remains extremely modest (see Figure 3).

The decline in method diversity occurred despite there being a proliferation of methodological innovations in the social sciences generally during this time. By the 2000s, protocols for a wide range of

qualitative approaches were now well-established, as they were for mixed methods. As a result, researchers now had access to more methodological guidance than in the past. Guidelines for improving the design and implementation of survey research had also been systematized by this stage. But while more methodological innovations were available, adoption did not necessarily follow. The question then remains: how can greater methodological diversity be institutionalized? We now turn to our future agenda for doing so.

TRIANGULATION AS A STRATEGY FOR REBALANCING IB RESEARCH

Our analysis has shown that over the 50-year period (1970-2019), methodological trends in this journal have followed a gradualist pattern, resulting in a growing preference for increasingly advanced analytical techniques to identify patterns in large archival datasets. This trend places emphasis on the technical precision of analysis to establish credibility and rigor. As a social norm, this pattern has been further entrenched by technological advancements and by requirements for the transparent reporting of procedures in research publications (Beugelsdijk et al., 2020). The self-reinforcing nature of these social, technological, and communicative conventions has meant that active interventions by authors and journal editors to legitimize a wider range of methodological choices – i.e., to expand the methodological bandwidth of the journal – have faced considerable barriers.

We have argued that these paradigmatic barriers to innovation and diversity constitute a threat to the rigor of the research we conduct. Methodological rigor is not assured by preferring a single method or analytical technique over another, or by concentrating on specific aspects of the research process such as data analysis. Rather, rigor requires a holistic approach that integrates multiple methodological elements together in a way that best suits the entire research design. For this reason, we advocate that our conventions about rigor in IB research need to be recalibrated to acknowledge the importance of building in triangulation to strengthen research designs, a strategy that we found has received little explicit recognition so far.

In this section, we first outline the different ways in which triangulation can be used as a *strategy* in designing a study for the purpose of controlling for errors, biases, and omissions of particular methods and techniques. We then make the case for institutionalizing triangulation as a *mindset* for the field hat

encourages the selection of alternative approaches to investigating a phenomenon; thus generating an ongoing dialog in the field about how best to gain an understanding of the phenomena we study.

Using triangulation as a strategy for designing an IB study

So far, we have concentrated on (1) method triangulation, (2) data triangulation and (3) analytical triangulation. In addition, other forms of triangulation have been proposed (Denzin, 1978; Farquhar et al., forthcoming; Jick, 1979), but rarely found in this journal: (4) theoretical triangulation, (5) contextual triangulation and (6) investigator triangulation. Together these forms of triangulation span the main methodological decisions involved in a research project (see Table 1). We now elaborate on how each of these forms of triangulation can be incorporated into an archival, survey, or qualitative study, either to enhance rigor through *validation*, or encourage discovery by expanding the *scope* of inquiry. We underscore, however, that the use of triangulation strategies does not strengthen a flawed study.

The advantage of *method triangulation* is that it has the potential to improve data quality and inferences drawn by validating substantive findings across a diverse set of methods (McGrath, Martin, & Kulka, 1982). It also expands the scope of inquiry by allowing for a greater range of research questions to be addressed, and a more holistic understanding of the phenomenon obtained. For example, Brannen and Peterson (2009) drew upon data from a survey administered as part of a multi-year ethnographic study to demonstrate how to integrate very different methods within the one study, and how the analysis of divergent results can form the basis for novel theoretical insights. Our expectation is that opportunities for the use of mixed methods will only increase in the future due to advances that are already being introduced to management research, such as solutions for automated textual analysis. We also expect to see more examples of hybrid techniques, such as QCA, that defy categorization as either qualitative or quantitative (e.g., Fainshmidt, et al., 2020) and challenge some of our existing expectations of the role of, and possibilities for, qualitative and quantitative research.

Data triangulation within a single-method study provides means to validate data and establish internal consistency of measures and constructs, as well as to extend the scope of inquiry by increasing the

variety of data used. For instance, Rao, Pearce, and Xin (2005) utilized a combination of archival data, survey data, and semi-structured interviews to test a series of hypotheses regarding reciprocal exchange and interpersonal trust among business associates. Their innovative data triangulation enabled a deeper test of theory resulting in both validation of existing conclusions as well as discovery of new, unexpected associations.

Analytical triangulation increases validity, reliability, and replicability of results, but also encourages adoption of less-frequently used analytical techniques to expand the scope of inquiry. This type of triangulation dominates archival and survey quantitative studies in particular, although most often in the form of *ex post* robustness tests as evidenced by our finding that analytical complexity has increased over the period while methods diversity has decreased. But opportunities exist to use analytical triangulation more extensively to broaden the scope of inquiry. For instance, Zhang, Zhong, and Makino (2015) used OLS regressions and 2SLS for hypotheses testing, and SEM for robustness tests to establish both convergent validity and develop new theory. Researchers can also apply various combinations of instrumental variable designs or comparative interrupted time series designs to broaden the scope of their studies.

Theoretical triangulation entails examination of the same dataset through different theoretical lenses, or even different paradigms (i.e., meta-triangulation, to use the term suggested by Lewis & Grimes, 1999). The purpose is either to test rival theories, extend existing theory by testing new hypotheses, or propose the synthesis of existing and even opposing theories. As Makadok, Burton and Barney (2018: 1533) suggested, decomposing theory into its component parts may open up several ways in which theoretical contributions can be made via triangulation, for example, research questions, focal phenomena, causal mechanisms, and outputs. As well as having the potential to improve the theoretical contribution that can be drawn from empirical investigations, theoretical triangulation can make salient the limitations, assumptions, and boundary conditions underlying current theories. For example, Lederman (2010) utilized a multilevel analysis to conduct a nested empirical assessment of competing hypotheses regarding the nature of the probability of product innovation.

Contextual triangulation involves explicitly building in multiple contextual elements, such as settings, locations, organizational units, and time, into a research design. The benefit of contextual triangulation is to specify the external validity, construct validity, and boundary conditions of our theories. Use of this form of triangulation may also extend the scope of inquiry by stimulating the use of a greater variety of methods and techniques – e.g., longitudinal analysis, multi-level analysis, historical methods, ethnographies – as scholars seek to account for the broader contextual settings within which IB phenomena take place. For instance, in quantitative research (both archival and survey), the use of quasi-experimental designs such as the pretest-posttest nonequivalent group design, the regression-discontinuity design, or the interrupted time series design may help in triangulating temporal aspects. Similarly, utilization of matched sample propensity scores (e.g., single-sample matched ANCOVA or more advanced multiset-sample procedures) or multilevel (e.g., HLM) analysis may account for contextual biases associated with setting, location, unit, and even time (e.g., Cuervo-Cazurra & Genc, 2008; Goerzen, Asmussen & Nielsen, 2013; Kotabe, Dunlap-Hinkler, Parente & Mishra, 2007; Mariotti & Marzano, 2019).

Investigator triangulation involves more than one researcher collecting data and/or interpreting results. Such triangulation improves the validity and reliability of data collection and analysis (e.g., the use of multiple translators for translation/back translation in survey research), as well as enabling interpretive plurality. Researchers with different theoretical and methodological backgrounds are able to provide not just more robust inferences that improve internal validity, but also additional insights and interpretations that expand the scope of inquiry. For example, Yagi and Kleinberg (2011) took on different roles during the research: the former was the ethnographer embedded within the organization, while the latter assumed the role of an informed outsider. While *JIBS* does publish point-counterpoint commentaries, other forms of investigator triangulation can be encouraged by editorial policy: for example, the *British Journal of Anaesthesia* has trialed a special section called 'Independent Discussion', where an independent author familiar with the data and methods used provides an alternative interpretation of the study's results.

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INSERT TABLE 1 ABOUT HERE

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We acknowledge that this call for more attention to triangulation in its various forms is easy to make but hard to implement, both within a single study and within the field. Turning first to the context of a single study, it is unrealistic to assume that any study will employ triangulation throughout the entire research process: it is simply too costly in terms of time and resources. As a result, important choices and trade-offs must be made regarding the necessity, impact, and value-added of implementing one or more triangulation strategies (Shadish, 1993; Shadish et al., 1986). While no amount of triangulation will ever completely eliminate the potential for biases, errors, or omissions (i.e., establish complete methodological validity), considering multiple permutations – of research questions, measures, samples, designs, analyses, results etc. – is essential for the rigor of a study's design and ultimately for the field as a whole. However, such variety can become a methodological and epistemological Pandora's box unless we apply critical judgment in deciding which forms of triangulation to be emphasized in a study. However difficult and costly, such tradeoffs and choices must be made explicitly to increase methodological rigor.

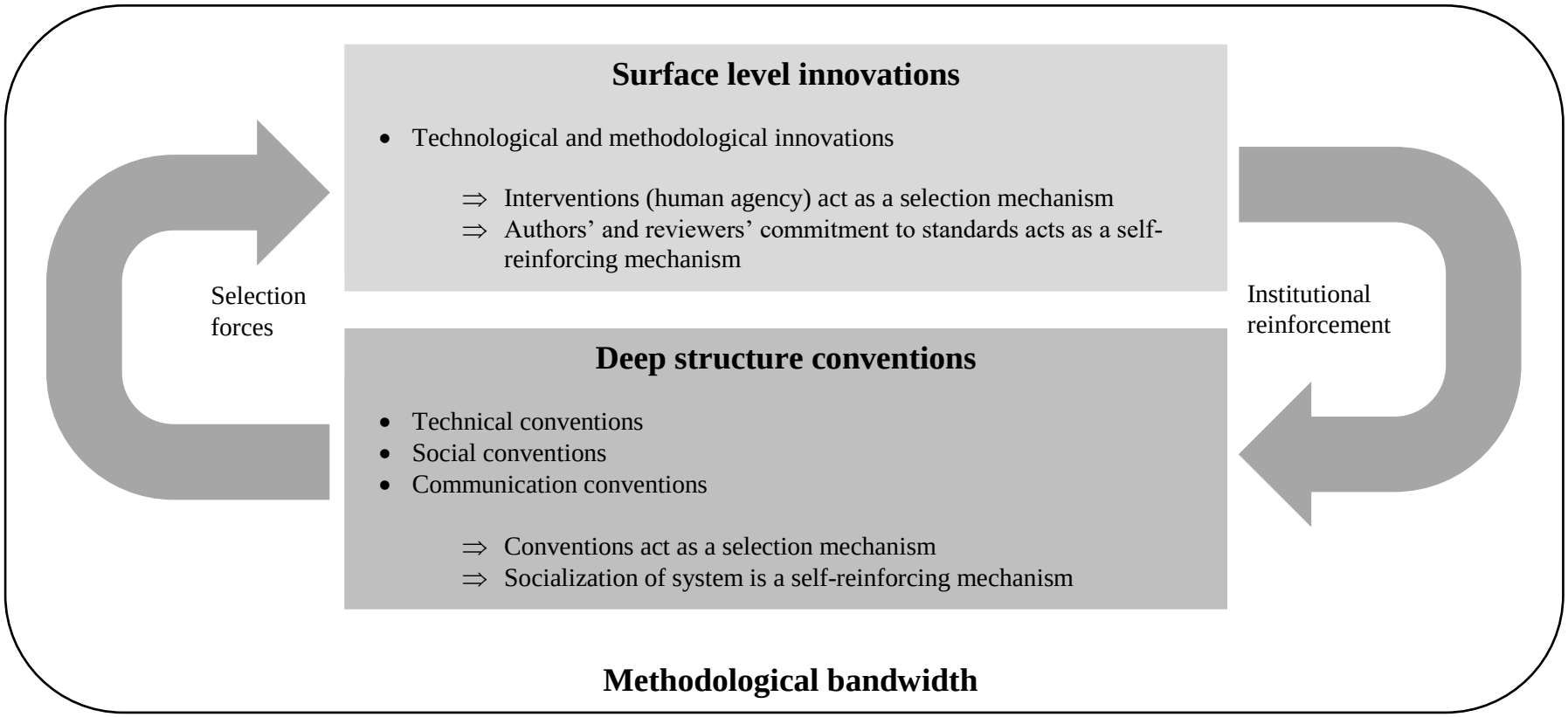
Moving from the context of a single study to the field of IB as a whole, our results have shown that introducing methodological change into a field faces formidable barriers in conditions of normal science: the mechanisms that reinforce existing conventions and select out variations represent powerful countervailing forces. We have suggested that the greatest impediment to change is social: our collective beliefs about methodological rigor that are taken for granted and rarely articulated. Triangulation as a research design strategy represents an important first step towards such change, however, to further institutionalize it we need to change the underlying mindset of how we conduct our research. As a research mindset for the field, triangulation would encourage the questioning of current methodological preferences and the search for alternatives – i.e., greater variety in evolutionary terms. It would spark an active debate in IB about prevailing assumptions and practices (i.e., the paradigm) regarding the rigor of the research that we conduct, the strengths and weaknesses of typical design and methodological choices, and encourage the

development and adoption of novel or neglected methodological combinations. This will require additional institutional changes beyond the methodological recommendations that have been the subject of the current paper. As our study has shown, institutionalizing methodological innovations is a protracted process involving a succession of interventions over time.

CONCLUSION

In this paper we have reported on methodological trends in empirical research in *JIBS* from 1970 to 2019. We showed that the methodological approaches used by IB scholars have changed slowly and incrementally during the 50-year period as a function of the dominant social, technical, and communicative conventions that make up the paradigm of IB research. Our findings point to a trend toward more analytical complexity predominantly applied to larger archival and increasingly third-party datasets, yet simultaneously reveal a trend toward less methodological diversity in the journal. We find these trends concerning because they potentially expose IB research to the biases, errors, and omissions that result from reliance on a narrow understanding of methodological rigor. We found that while there was an increase in multiple analytical techniques being used in the same study, this tended to be associated with *ex-post* robustness analysis as a way of confirming validity rather than *ex-ante* choices designed to broaden the scope of inquiry. By the same token, the relative decrease in methodological choices applied by IB scholars restricts the types of questions and answers we pursue as a field. We point to triangulation in its various forms as a potential way forward for scholars to enhance rigor and expand the scope of inquiry in IB research.

Figure 1: Scientific evolution in international business



Source: Authors

Figure 2: Percentage of *JIBS* Papers by Method by Decade

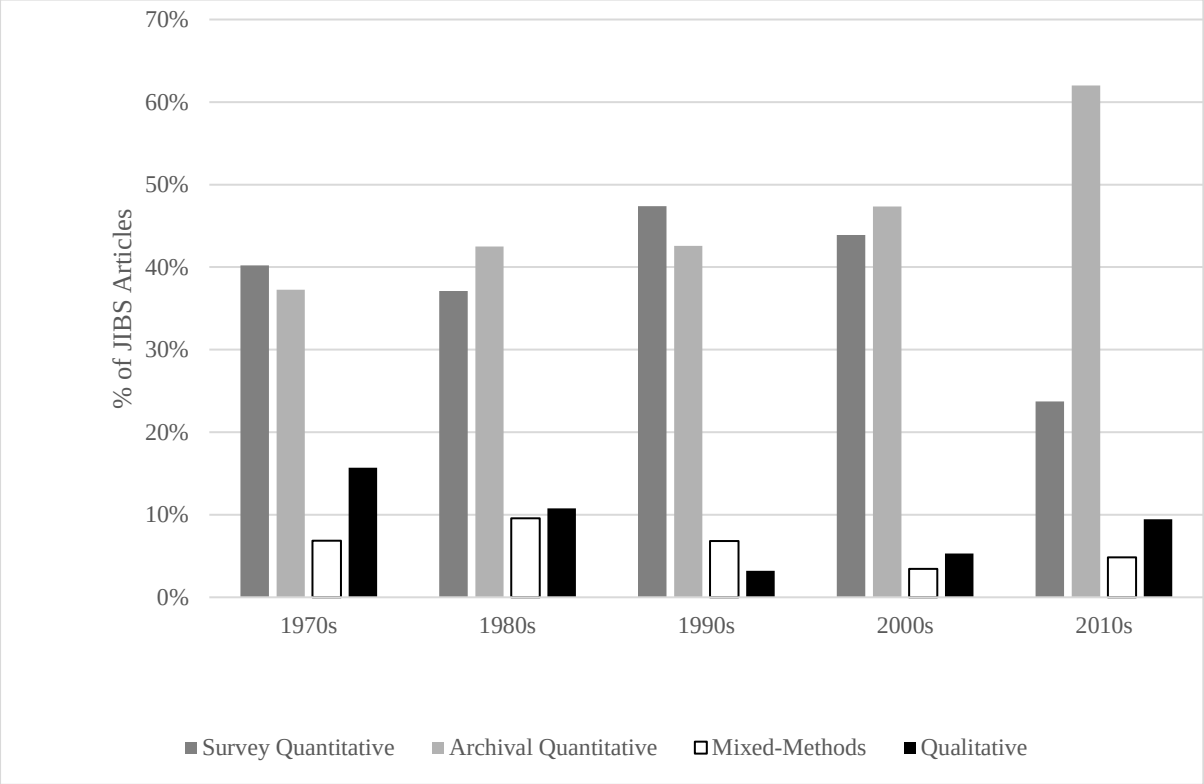


Figure 3: Percentage of *JIBS* Papers by Method 2010-2019

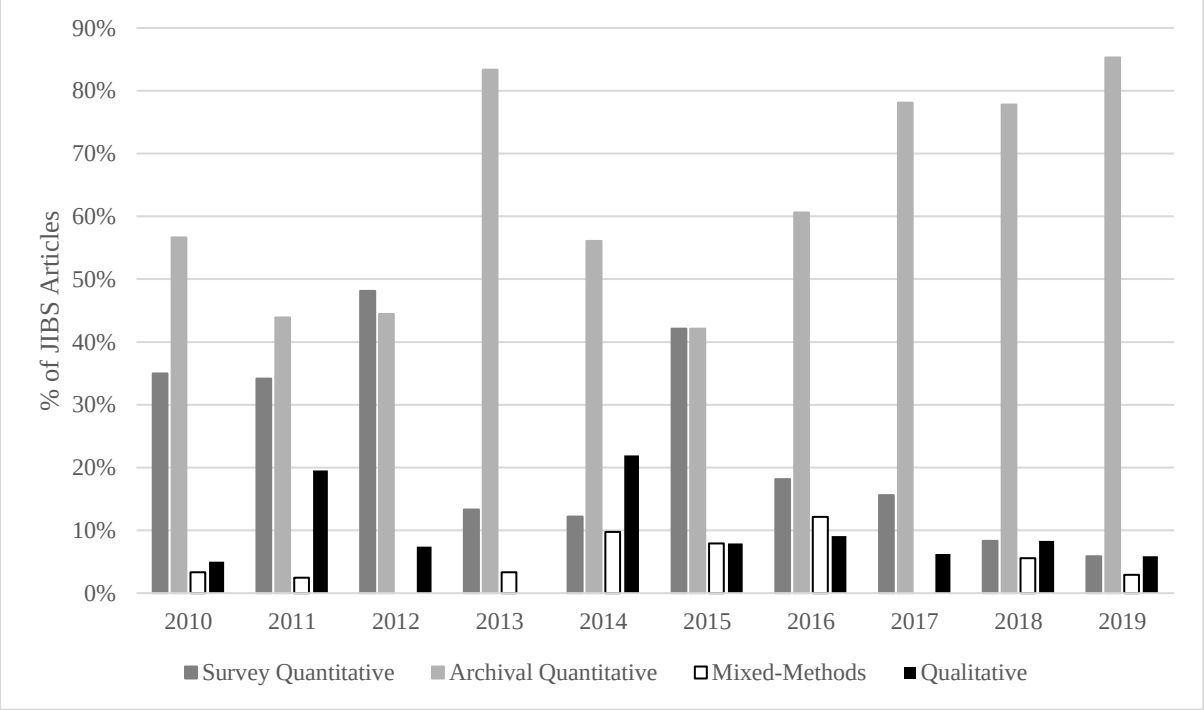
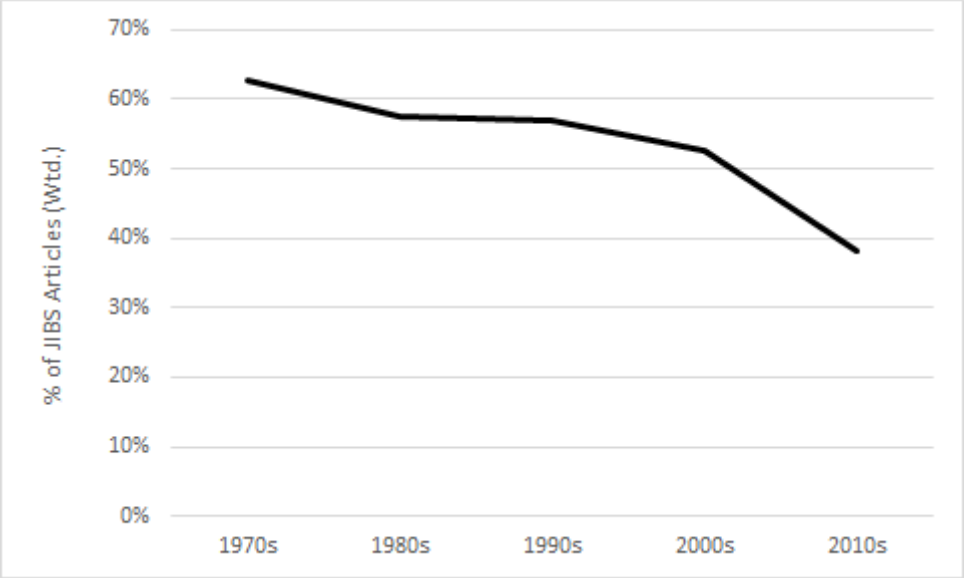
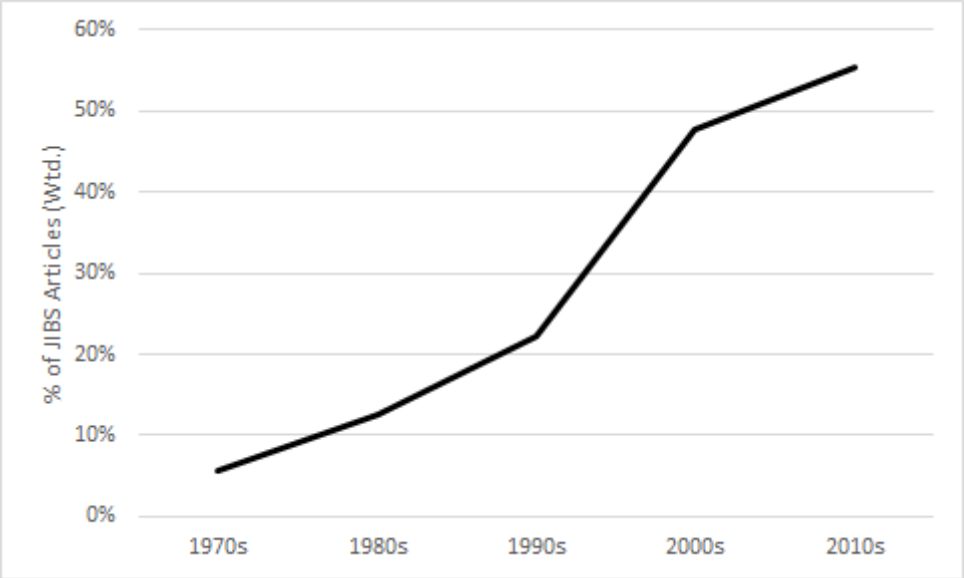


Figure 4a: Methods Diversity of *JIBS* Papers by Decade



Method Diversity is as the percentage of papers that use survey quantitative, mixed methods and qualitative methods.

Figure 4b: Methods Complexity of *JIBS* Papers by Decade



Method Complexity is computed in two steps: First, we compute, the percentage of advanced analytical techniques for survey quantitative and archival quantitative; percentage of qualitative and mixed method papers that use software-enabled analysis. Second, we weighted each by the percentage of each method used in *JIBS* during each decade.

Table 1: Integrating triangulation into a study

Type of Triangulation	Definition	Validation	Scope
Method triangulation	Combining two or more methods (multi-method) within the same study (includes mixed- method designs of qualitative and quantitative methods)	Verifying results obtained from use of one method by comparing it to results from another method (e.g., using qualitative/archival evidence to verify survey results)	Enabling both theory discovery and testing in a single study by mixing methods (e.g., qualitative and quantitative); addressing a broader range of questions than possible using a single method; augmenting the interpretation of results
Data triangulation	Combining multiple data sources or multiple techniques for data collection within a single-method study	Reducing single source bias by: - collecting/combining data from multiple archival databases and/or use of simulations; - collecting survey data using different survey modes; - verifying results from multiple respondents to surveys or interviews; - using multiple qualitative data sources and techniques	Contrasting data by: - assembling a novel database from multiple archival data sources to increase variability; - surveying or interviewing different respondents in the same group or organization; - using open and/or close-ended questions in a survey; - using multiple qualitative data collection techniques
Analytical triangulation	Using different analytical techniques on the same dataset within a single-method study	Using multiple analytical techniques to establish validity of measures, constructs, and results	Using multiple analytical techniques to develop new constructs, address a greater range of research questions, and test competing models of causality, temporality, and multidimensionality
Theoretical triangulation	Examining the same dataset through different theoretical lenses or paradigms	Testing related or opposing (competing) hypotheses based on multiple theoretical perspectives on the same dataset	Developing new hypotheses by juxtaposing different theoretical lenses; in qualitative research, developing a theoretical synthesis by analyzing the same case(s) from the perspective of multiple competing theories
Contextual triangulation	Building in differences in setting, location, unit, and time during data collection and analysis	Establishing boundary conditions of theories and equivalence/content validity of results across contexts vis-a-vis multiple settings, location, units, and/or time	Developing new research questions, measures, constructs, or insights by exploring novel contextual settings, locations, units, or time periods
Investigator triangulation	Using more than one researcher to collect data and/or interpret results	Using multiple researchers to cross-check: - data collection and fieldwork (e.g., 'wrangle' archival data, reduce cultural biases and check for translation equivalence of survey instrument or interview guide, use of multiple coders to ensure inter-rater reliability); - analytical process (e.g., assess results against methodological choices)	Using multiple researchers to provide contrasting interpretations of results; benefiting from local (emic) knowledge by using researchers from multiple countries to collect and analyze data

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[1] Denzin (1978) and Jick (1979) use the terms '*between-method triangulation*', to refer to combining qualitative and quantitative methods (both with regards to data collection and analysis) for the purpose of examining the same phenomenon within the same study; and '*within-method triangulation*', to denote the use of multiple data sources and settings, data collection techniques, or analytical techniques within the same method (see also e.g., Brannen & Peterson; 2009). We have developed a different categorization in this paper but have distinguished when necessary between multi- and single-method studies.

[2] In line with Harkness et al. (2003), van Herk et al. (2005) and Hult et al. (2008), our understanding of data collection equivalence refers to whether (a) the instrument used to collect the required data was translated appropriately across different cultures and (b) the data collection procedures were comparable across different cultures.

[3] These observations about the process of adopting methodological innovations is based on an in-depth case analysis, which is available from the authors upon request.

[4] For instance, Cuervo-Cazurra et al. (2016) included both qualitative and quantitative research in their recommendations for improving the trustworthiness of research